FILING DATE

Also pursuant to the Decision of this Office dated October 8, 1999, granting Applicant's Petition for the original filing date, please amend the INID code [22] as follows: [Filed: Jan. 4, 1993] Filed: Dec. 30, 1991.

IN THE SPECIFICATION

Please amend the specification as follows:

Col. 1, line 9, after "FIELD OF THE INVENTION" and before the first paragraph, insert the following paragraph:

~~This is a continuation of reissue application serial no. 08/861,457, filed on May 22, 1997.~~

Col. 3, lines 44-47, delete the paragraph "FIG. 3 is a vertical cross section of a special casing joint equipped with a drillable packer and retrievable whipstock for drilling and completion of the side-tracked hole of Case 3.";

Col. 4, lines 4-7, delete the paragraph "FIG. 6 is a schematic vertical cross section of a well and two drainholes, showing the various fluid levels in the reservoir.";

Replace the paragraph beginning at column 7, line 26, with the following:

Case 3 includes a special casing joint equipped with a drillable packer and retrievable whipstock for drilling and completion of a side-tracked hole. In Case 3, a vertical well is drilled, with its lower 50 ft deviated at the angle required to kick-off a horizontal drainhole and oriented in the direction selected for the drainholes. A special casing string is made-up, run-in and cemented by known techniques into the vertical and deviated portions of the hole. It consists of a shoe, a float collar and a special casing joint, see FIGS. 3a-3c, [(FIG. 3)] located at a depth slightly above that of the start of the hole deviation. This casing joint presents an elliptical window machined into the casing with a downward orientation of a few degrees from the vertical. [The] As previously shown in Fig. 1, the window (1) is again plugged off with a drillable plate (2) made, for instance, of a soft metal and shaped to generally conform with the casing surfaces. The plug is firmly attached to the casing by means of drillable fasteners [(29)]. Its

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orientation is also indicated by a vertical drillable key or grove (30) in the casing joint inner surface at or near its lower end.

Replace the paragraph beginning at column 8, line 21, with the following:

After the cement has set and the cementing string has been pulled out, the outer saw-tooth ~~groves~~ grooves [(38)] of the whipstock are latched into an overshot tool equipped with a milling edge to drill out the elliptical collar (35) and the whipstock is pulled out. The supporting whipstock packer (31) is also drilled out and pulled out with the overshot milling tool, which also is equipped at its lower end with a suitable packer-latching device. These operations leave full openings in both the deviated casing and the side-tracked intermediate liner. Both of them provide a relatively large deviated casing and a slightly smaller liner to be used as the respective starting points of two drainholes, in the same way as in Case 2, but the drainhole diameters and that of their respective liners may be greater than that of Cases 1 or 2.

Replace the paragraph beginning at column 11, line 36 with the following:

In under-pressured reservoirs containing low GOR oil, reservoir energy may be insufficient to convey the production stream up to a pump or gas lift valve located above the kick-off points of the drainholes. The difference in elevation between such a pump and the fluids entry points in the horizontal part of the drainholes is greater than the drainholes radius of curvature, which may be up to 500 ft. In addition, there are significant friction pressure drops through the horizontal and curved portions of small-diameter liners, which may reduce the calculated net flowing fluid head at the pump [(49)] inlet to a value below the required minimum NPSH of the pump. This indicates that cavitation is likely to occur in the pump, with highly detrimental erosion effects and a reduced flowrate. To alleviate this problem, flow from each drainhole may be directed to an oil sump (50), with the pump taking suction at or near the bottom of the sump. See FIG. 6b. The top of the sump is closed by a packer (51) a short distance above the highest kick-off point. It constitutes the apex of a kind of syphon (see [FIG. 6] FIG. 6b) for each drainhole. For very low GOR oil, frequently present in under-pressured mature reservoirs, the flowing pressure at that point may still be well above the bubble point of the production stream, so that the risk of cavitation and break-up of the de-celerating liquid stream at that point is much less than it would be in a pump at the same location. The flowing pressure at the apex, plus the liquid head in the sump, provide a pump suction pressure exceeding the minimum NPSH required, thus eliminating the risk of cavitation in the bottom pump.

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